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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,035	03/01/2000	Robert A. Cohen	US 000050	3183

7590 01/03/2002

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EXAMINER
PHILIPPE, GIMS S

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 01/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/516,035	Applicant(s) Cohen et al.
	Examiner Gims Philippe	Art Unit 2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-4 and 6-11* is/are rejected.

7) ☒ Claim(s) *5* is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

1. This is a first office action in response to application no. 09/516,035 filed on March 1, 2000 in which claims 1-11 are presented for examination.

Information Disclosure Statement

The examiner acknowledges receipt of the information disclosure statement filed on October 5, 2001 under 37 CFR 1.97. The reference attached to such information has been considered and a signed copy of the PTO 1449 is attached.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 6-8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent no. 6,275,531).

Regarding claim 1, Li discloses a method for streaming scalable video including a base layer data and enhancement layer data (See Li's Abstract). The method comprising the steps of transmitting

the base layer for a given interval (See Li fig. 1, items 30 and 60, and col. 3, lines 20-21), selecting a predetermined number of frames to distribute (See Li col. 3, lines 39-43). The applicant should duly note that the claimed *"predetermined number of frames"* if found in Li's N number of enhancement layer data. The method comprises the steps of calculating a reduced amount of enhancement layers data to transmit in the predetermined number of frames (See Li col. 3, lines 59-64), and transmitting the reduced amount of enhancement layer data in the given interval (See Li col. 3, lines 58-67 and col. 4, lines 1-3). The applicant should also note that the claimed *"given interval"* is analogous to Li's interval disclosed in col. 1, lines 46-47.

It is noted that Li does not specifically disclose determining loss of bandwidth occurring as one of the factors for effecting the number of enhancement layers to be transmitted as specified in claim 1.

However, the solution provided by Li in col. 3, lines 28-42 is similar as claimed in that when the bandwidth is limited because of various conditions in which loss of bandwidth can be one of them, the amount of enhancement layers may be restricted to satisfy the bandwidth constraint.

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Li before him/her would recognize the advantage of determining if a loss of bandwidth has occurred in a given interval. The motivation for determining if a loss of bandwidth has occurred in a given interval being that in order to accommodate all the users of a server, only the higher

priority coded data will be transmitted while the amount of enhancement layer data will be restricted to satisfy the bandwidth constraint.

As per claim 2, most of the limitations of this claim have been noted in the above rejection of claim 1. In addition, Li further discloses the same method comprising transmitting non-enhancement layer during a given interval (See Li col. 5, lines 48-49, and col. 9, lines 53-55) wherein the guaranteed base layer is a non-enhancement layer.

As per claim 3, most of the limitations of this claim have been noted in the above rejection of claim 1. It is noted that Li is silent about distributing the loss of bandwidth evenly over the predetermined number of frames.

However, in col. 3, lines 30-33, Li discloses that *"in order to try to accommodate all of its users, the server will prioritize the data and only transmit the higher priority coded packets of information"*. The step of transmitting only the higher priority data to accommodate all of the users is considered analogous to the step of evenly distributing the loss of bandwidth as claimed.

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of distributing the loss of bandwidth evenly over the predetermined number of frames. The skilled artisan would be motivated to look to Li's step of accommodating all the users with only the higher priority data since doing so would ensure that every user receive at least the minimum number of frames necessary. As a result of such step, the

lowest bandwidth receiver will be able (which constitutes the guaranteed base layer) to reconstruct the video data.

As per claim 4, most of the limitations of this claim have been noted in the above rejection of claim 1.

It is noted Li is silent about determining if there is still space in the given interval in order to transmit at least a portion of a reduced amount of enhancement layer from a second interval as specified in claim 4.

However, in col. 3, lines 60-64, Li discloses *"determining a number of M enhancement layers capable of being received from the transmission channel"*. It should be noted that in order to determine a number of additional enhancement layer data capable of being received from the transmission channel at least the enhancement encoder must determine the amount of space available when negotiating with the network.

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of determining if there is still space in the given interval in order to transmit at least a portion of a reduced amount of enhancement layer from a second interval. The skilled artisan would be motivated to look to Li's prioritization step (See Li col. 5, lines 41-67) to determine if there is still space in the given interval in order to transmit at least a portion of a reduced amount of enhancement layer from a second interval. The motivation being that if more

space is available in the given interval the finer the granulity of the reconstructed video image will be.

As per claim 6, most of the limitations of this claim have been noted in the above rejection of claim 1. In addition, Li discloses the same method for streaming scalable video wherein the enhancement layer has a fine grain scalability structure (See Li col. 3, lines 1-17).

Regarding claim 7, Li discloses a method for streaming scalable video including a base layer data and enhancement layer data (See Li's Abstract). The method comprising the steps of transmitting the base layer for a given interval (See Li fig. 1, items 30 and 60, and col. 3, lines 20-21), selecting a predetermined number of frames (See Li col. 3, lines 39-43). The applicant should duly note that the claimed *"predetermined number of frames"* is found in Li's N number of enhancement layer data. The method comprises the steps of producing a reduced amount of enhancement layer data (See Li col. 3, lines 59-64), and transmitting the reduced amount of enhancement layer data in the given interval (See Li col. 3, lines 58-67 and col. 4, lines 1-3). The applicant should also note that the claimed *"given interval"* is analogous to Li's interval disclosed in col. 1, lines 46-47.

It is noted that Li does not specifically discloses distributing a loss of bandwidth over the predetermined number of frames as one of the factors for effecting the number of enhancement layers to be transmitted as specified in claim 7.

However, the solution provided by Li in col. 3, lines 28-42 is similar as claimed in that when the bandwidth is limited because of various conditions in which loss of bandwidth can be one of them, the amount of enhancement layers may be restricted to satisfy the bandwidth constraint.

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Li before him/her would recognize the advantage of distributing a loss of bandwidth over the predetermined number of frames to produce a reduced amount of enhancement layer data. The motivation for distributing a loss of bandwidth over the predetermined number of frames to produce a reduced amount of enhancement layer data being that in order to accommodate all the users of a server of a transmission channel when various conditions in which loss of bandwidth is sometimes inevitable, only the higher priority coded data will be transmitted while the amount of enhancement layer data will be restricted in order to meet the bandwidth constraint.

As per claim 8, most of the limitations of this claim have been noted in the above rejection of claim 7.

It is noted that Li is silent about distributing the loss of bandwidth evenly over the predetermined number of frames.

However, in col. 3, lines 30-33, Li discloses that *"in order to try to accommodate all of its users the server will prioritize the data and only transmit the higher priority coded packets of*

information". The step of transmitting only the higher priority data to accommodate all of the users is considered analogous to the step of evenly distributing the loss of bandwidth as claimed.

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of distributing the loss of bandwidth evenly over the predetermined number of frames. The skilled artisan would be motivated to look to Li ' step of accommodating all the users with only the higher priority data since doing so would ensure that every user receive at least the minimum number of frames necessary in other words, the lowest bandwidth receiver will be able (which constitutes the guaranteed base layer) to reconstruct the video data.

Regarding claim 11, Li discloses an apparatus for streaming scalable video including a base layer data and enhancement layer data (See Li's Abstract). The apparatus comprising means for transmitting the base layer for a given interval (See Li fig. 1, items 30 and 60, and col. 3, lines 20-21), means for selecting a predetermined number of frames to distribute (See Li col. 3, lines 39-43). The applicant should duly note that the claimed *"predetermined number of frames"* is found in Li's N number of enhancement layer data. The apparatus comprises the means for calculating a reduced amount of enhancement layers data to transmit in the predetermined number of frames (See Li col. 3, lines 59-64), and means for transmitting the reduced amount of enhancement layer data in the given interval (See Li col. 3, lines 58-67 and col. 4, lines 1-3). The applicant should

also note that the claimed *"given interval"* is analogous to Li's interval disclosed in col. 1, lines 46-47.

It is noted that Li does not specifically discloses means for determining loss of bandwidth occurring as one of the factors for effecting the number of enhancement layers to be transmitted as specified in claim 1.

However, the solution provided by Li in col. 3, lines 28-42 is similar as claimed in that when the bandwidth is limited because of various conditions in which loss of bandwidth can be one of them, the amount of enhancement layers may be restricted to satisfy the bandwidth constraint.

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Li before him/her would recognize the advantage of determining if a loss of bandwidth has occurred in a given interval. The motivation for determining if a loss of bandwidth has occurred in a given interval being that in order to accommodate all the users of a server when various conditions in which loss of bandwidth is sometimes inevitable, only the higher priority coded data will be transmitted while the amount of enhancement layer data will be restricted to maintain the bandwidth constraint.

4. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent no. 6,275,531) in view of Chaddha (US Patent no. 5,742,892).

Regarding claim 9, Li discloses streaming scalable video including a base layer data and enhancement layer data (See Li's Abstract). Transmitting the base layer for a given interval (See Li fig. 1, items 30 and 60, and col. 3, lines 20-21), selecting a predetermined number of frames to distribute (See Li col. 3, lines 39-43). The applicant should duly note that the claimed *"predetermined number of frames"* is found in Li's N number of enhancement layer data. Calculating a reduced amount of enhancement layers data to transmit in the predetermined number of frames (See Li col. 3, lines 59-64), and transmitting the reduced amount of enhancement layer data in the given interval (See Li col. 3, lines 58-67 and col. 4, lines 1-3). The applicant should also note that the claimed *"given interval"* is analogous to Li's interval disclosed in col. 1, lines 46-47.

It is noted that Li does not specifically discloses determining loss of bandwidth occurring as one of the factors for effecting the number of enhancement layers to be transmitted as specified in claim 1.

However, the solution provided by Li in col. 3, lines 28-42 is similar as claimed in that when the bandwidth is limited because of various conditions in which loss of bandwidth can be one of them, the amount of enhancement layers may be restricted to satisfy the bandwidth constraint.

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Li before him/her would recognize the advantage of determining if a loss of bandwidth has occurred in a given interval. The motivation for determining if a loss of bandwidth has occurred in

a given interval being that in order to accommodate all the users of a server, when various conditions in which loss of bandwidth is sometimes inevitable, only the higher priority coded data will be transmitted while the amount of enhancement layer data will be restricted in order to maintain the bandwidth constraint.

It is also noted that although Li accomplishes the decoding of the multiplexed streams with the algorithm of flow diagrams 1100-1400 of fig. 11-14 (See Li col. 6, lines 13-15 and fig. 11-14), it is silent about the memory medium including code for streaming scalable video as specified in claim 9.

However, Chaddha discloses a memory medium including code for streaming scalable video (See Chaddha fig. 1, server 20 with memory medium 80, and col. 4, lines 27-58).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of providing a memory medium including code in Li's server of the steps of streaming scalable video (which is suggested by Li since it provides a server along with the methods and algorithms as disclosed in col. 6, lines 13-15). The motivation for modifying Li is to satisfy the need to provide encoding such that a server storing the code outputs embedded data streams from which decoders may extract video having different spatial resolutions, temporal resolutions and data rates as taught by Chaddha (See Chaddha col. 1, lines 17-21 and col. 2, lines 44-48).

Regarding claim 10, Li discloses streaming scalable video including a base layer data and enhancement layer data (See Li's Abstract). Transmitting the base layer for a given interval (See Li fig. 1, items 30 and 60, and col. 3, lines 20-21), selecting a predetermined number of frames to distribute (See Li col. 3, lines 39-43). The applicant should duly note that the claimed *"predetermined number of frames"* is found in Li's N number of enhancement layer data. Calculating a reduced amount of enhancement layers data to transmit in the predetermined number of frames (See Li col. 3, lines 59-64), and transmitting the reduced amount of enhancement layer data in the given interval (See Li col. 3, lines 58-67 and col. 4, lines 1-3). The applicant should also note that the claimed *"given interval"* is analogous to Li's interval disclosed in col. 1, lines 46-47.

It is noted that Li does not specifically discloses determining loss of bandwidth occurring as one of the factors for effecting the number of enhancement layers to be transmitted as specified in claim 1.

However, the solution provided by Li in col. 3, lines 28-42 is similar as claimed in that when the bandwidth is limited because of various conditions in which loss of bandwidth can be one of them, the amount of enhancement layers may be restricted to satisfy the bandwidth constraint.

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Li before him/her would recognize the advantage of determining if a loss of bandwidth has occurred in a given interval. The motivation for determining if a loss of bandwidth has occurred in

a given interval being that in order to accommodate all the users of a server, when various conditions in which loss of bandwidth is sometimes inevitable, only the higher priority coded data will be transmitted while the amount of enhancement layer data will be restricted in order to maintain the bandwidth constraint.

It is also noted that although Li accomplishes the decoding of the multiplexed streams with the algorithm of flow diagrams 1100-1400 of fig. 11-14 (See Li col. 6, lines 13-15 and fig. 11-14), it is silent about a memory which stores executable codes for streaming scalable video as specified in claim 10.

However, Chaddha discloses a memory which stores executable codes for streaming scalable video (See Chaddha fig. 1, server 20 with memory medium 80, and col. 4, lines 27-58).

Therefore, it is considered obvious that one skilled in the art at the time of the invention would recognize the advantage of providing a memory which stores executable codes in for streaming scalable video in Li's server (which is suggested by Li since the prior art provides a server along with the methods and algorithms as disclosed in col. 6, lines 13-15). The motivation for modifying Li is to satisfy the need to provide encoding such that a server which stores the executable codes outputs embedded data streams from which decoders may extract video having different spatial resolutions, temporal resolutions and data rates as taught by Chaddha (See Chaddha col. 1, lines 17-21 and col. 2, lines 44-48).

Allowable Subject Matter

5. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claim 5 is allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly a method for streaming scalable video comprising the step of determining if a predetermined number of frames selected to distribute a loss of bandwidth has expired, determining if any left over enhancement layer data exists, calculating a second reduced amount of enhancement layer data to transmit in a second predetermined number of selected frames, and transmitting the second reduced amount of enhancement layer data in a second given interval. It is noted that the closest prior art, Li (US 6,275,531 B1) shows a similar method for streaming scalable video. However, Li fails to disclose *"determining if a predetermined number of frames selected to distribute a loss of bandwidth has expired, determining if any left over enhancement layer data exists, calculating a second reduced amount of enhancement layer data to transmit in a second predetermined number of selected frames, and transmitting the second reduced amount of enhancement layer data in a second given interval."* as claimed.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gupta et al. (US Patent no. 5,740,176) teaches scalable multimedia network.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S. Philippe whose telephone number is (703) 305-1107. The examiner can normally be reached on Tuesday through Friday from 9 a.m. to 6 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley, can be reached on (703) 305-4856. The fax phone number for this Group is (703) - 308-5399.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)-305-4700

Gims S. Philippe

December 28, 2001

GIMS S. PHILIPPE
PATENT EXAMINER